Development of Criteria to Define Alternatives

Advisory Committee
August 17, 2005

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Outline for Discussion

- **Consideration of Project Objectives**
- **Process used to develop Range of Final Alternatives**
- **Criteria that must be considered to define Final Alternatives**
- **Methodology to obtain input on the criteria**

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Alternatives will be Developed in a Step-wise Manner

- **Project objectives as defined in legislation**
- **Input from Advisory Committee, Work Groups, Science Panel, stakeholders, and public**
- **Identifying habitat goals/objectives**
- **Defining range of features to be included in restoration scenarios**
- **Need to consider criteria to be used to combine features into final range of alternatives**

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Input from Advisory Committee

- **At August Advisory Committee Meeting**
  - Discuss overall Project Objectives
  - Discuss Potential Criteria
    - Initial reaction and thoughts
    - Other criteria that should be considered?
- **At September Advisory Committee Meeting**
  - View potential applications of the Criteria
  - Decide upon Criteria to be used to develop reasonable range of final alternatives
- **Final Alternatives presented at October Advisory Committee Meeting**

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Project Objectives based on Legislation and Input

- **In-Sea Habitat**
  - Long-term stable aquatic and shoreline habitat for diversity of fish and wildlife
  - Stable salinity and elevation
  - Comply with CESA/ESA
  - Comply with Migratory Bird Treaty Act
  - Consistent with QSA
- **Other Salton Sea Criteria**
  - Continued use of the Sea for agricultural discharge
  - Protect geothermal resources

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Project Objectives - continued

- **Water Quality in Salton Sea and Inflows**
  - Improve water quality to support habitat and other water uses
  - Reduce human health and ecological risks
- **Air Quality**
  - Eliminate air quality impacts due to restoration plans
- **Focus efforts in Salton Sea watershed**
- **Consider recreational and economic opportunities**

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Development of Alternatives

Inflow Criteria

- **Average Annual Flows**
  - Developed with Working Group
  - Maximum Flows = No Action Alternative = 950,000 af
  - Minimum Flows - based on Variability Confidence Level
    - 80% Confidence Level = 620,000 af
    - 90% Confidence Level = 580,000 af
    - 95% Confidence Level = 530,000 af
- **Range of Individual Annual Flows**
  - Maximum Flows - "Wet Weather Event" = 1,200,000 af
  - Minimum Flows - based on historic patterns
- **Questions to be determined**
  - *Should all Final Alternatives be developed to operate under full range of inflows?*
  - *Should we define a certain set of confidence levels?*

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Restoration Plans will include Different Habitats

- **In-Sea habitat considered to enhance habitat along Pacific Flyway**
  - Open, deep water
  - Shallow saline habitat
  - Shallow freshwater habitat
  - Hypersaline salt sink
- **Provide continuity between drains for pupfish**
- **Habitat restoration may also include refuges, agricultural areas, & riparian corridors**

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Salton Sea Habitat Criteria

- **Open, Deep Water**
  - Provide stable marine salinity to support historical fish and fish-eating birds with stable elevation
  - Primary habitat under existing conditions
- **Shallow Saline Habitat**
  - Combine freshwater inflows with marine water
  - Could mitigate for loss of existing Open, Deep Water
- **Shallow Freshwater Habitat**
  - Existing freshwater habitat exist at refuges
  - New freshwater habitat could be in Salton Sea
  - Must be managed to limit avian disease & vectors
- **Questions to be determined**
  - *Should all Final Alternatives (except Gulf of California) include Shallow Saline and Freshwater Habitats?*

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Water Quality Criteria

- **Focused on Selenium and Nutrients**
- **Water treatment of inflows**
  - Reduce eco & human health risk in habitat
  - Reduce loadings to open, deep marine water
- **Water quality issues in open marine water**
  - Currently developing analyses to determine extent and severity of problems
  - Some water quality problems may not be eliminated for many years following construction
- **Questions to be determined**
  - *Should all Final Alternatives include water quality management to reduce eco & human health risks?*
  - *Can a Final alternative have some water quality risk?*

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Apply Criteria to Alternatives with Barrier Configurations

- **To determine size of Open Marine Water**

Inflows
- Water use by Shallow Freshwater Habitat
- Water loss in Treatment Process
- Water use by Air Quality Management
- Water use by Shallow Saline Habitat

Water available for Open Marine Water

- **Balance size of Open Marine Water with Brine Pond to maintain marine salinity in Sea**
- **Iterate with water use by Air Quality Mgt.**

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Barrier Configurations also Based on Elevation of Open Water

- **Results will be vary for different elevations**
  - -228 feet Mean Sea Level (MSL) - Existing
  - -230 feet MSL: about 0 to 1/4 mile from Existing
  - -235 feet MSL: about 1/2 to 3/4 mile from Existing
- **Questions to be determined**
  - *What types of criteria should be considered for stable elevation?*
    - *Minimize separation from existing land uses?*
    - *Maximize separation between land use and habitat?*
    - *Expose lands that could be used for other land uses?*
    - *Minimize pumping facilities?*

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Extent of Air Quality Management Based on Uses of Exposed Areas

- **Exposed Areas will occur in all Configurations except Export to Gulf**
- **Potential uses of Exposed Areas**
  - Placement of Freshwater Reservoir for IID
  - Agricultural lands
  - Industrial uses - including geothermal production
  - Other development potential
- **Questions to be determined**
  - *Should the PEIR include any of these uses in the Alternatives? or assume "worst case" and provide for Air Quality Mgt. on all exposed soils?*

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Evolving Sea Alternative

- **Determine size/salinity trends for brine pond**

  Inflows
  - Water use by Shallow Freshwater Habitat
  - Water loss in Treatment Process
  - Water use by Air Quality Management
  - Water use by Shallow Saline Habitat
  Water flow to brine pond

- **Iterate with water use by Air Quality Mgt.**
- **Questions to be determined**
  - *Should shallow water be included and, if so, focused near confluences? refuges? isolated from communities?*

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Export to the Gulf of California Alternative

- **Select export/import concept that leads to stable elevation of Open, Marine Water with salinity of 30,000 to 40,000 mg/L (salinity)**
- **Include treatment for exports to avoid contamination of biota in Upper Gulf**
  - Additional treatment following removal of selenium and nutrients to remove biota that could pollute Gulf
- **Questions to be determined**
  - *Is this viable due to the facilities in Mexico with extensive environmental disturbance?*
  - *Should this configuration be included in the Final Alternatives*

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Comments on Criteria

- **Use of criteria will reduce the number of alternatives**
- **Are there other potential criteria that we did not mention?**
- **Do you have comments?**
- **Send comments/suggestions via e-mail or Advisory Committee reflector**
  - E-mail: saltonsea@water.ca.gov
  - Reflector: Salton_Sea@water.ca.gov
- **Bring comments/suggestions to September 20 Advisory Committee Meeting**

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